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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,374

06/03/2005

Jean-Paul Domen

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EXAMINER

FLANIGAN, ALLEN J

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

09/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,374	Applicant(s) DOMEN, JEAN-PAUL	
	Examiner Allen J. Flanigan	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-10 is/are pending in the application.
- 4a) Of the above claim(s) 7, 8 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-6 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

Claims 7, 8, and 10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 5/22/2008.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Gross et al. and Norbäck.

Gross et al. show one piece heat exchanger elements formed by an “extrusion blowing process” (blow molding, presumably, since the specification refers to the blow mold). Gross et al. do not show a uniform thickness flow passage in the connected heat exchanger elements, instead showing multiple lumen type passages (Fig. 2). It is known in such stacked element designs to form elements with a single flow passage that extends essentially throughout the extent of the element, where the walls of the tubular elements are formed with corrugations for mechanical rigidity, flow mixing, and increased surface area, and are uniformly spaced to avoid flow obstruction for the confined liquid. Thus, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to form the elements of the plastic

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radiator of Gross et al. in the form disclosed in Norbäck. Alternately, Gross et al. teach an alternative one piece construction for heat exchanger elements connected at their ends where manifold spaces are formed, utilizing blow molding to result in a nonseamed element, and it would have been obvious to one of ordinary skill in the art to form the elements or "cells" of Norbäck in this manner.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Gross et al. and Norbäck as applied to claim 4 above, and further in view of Schukey.

Conventionally, heat exchangers with plates defining flow passages have plates that are generally planar as shown in Norbäck; however, it is known in the art to form the plates in an angled configuration to provide comparable surface area in a narrower profile (see Schukey, Figs. 4, 7), and it would have been obvious for one of ordinary skill in the art to provide a similar angled profile in the facing walls of the heat exchanger of Gross et al. as modified above.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Gross et al. and Norbäck as applied to claim 4 above, and further in view of Blomgren.

It is known in the art to confine the second fluid flowing outside the plates of heat exchangers such as those shown in Gross et al. and Norbäck by enclosing the exchanger elements within a housing, as shown in Blomgren,

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and it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ such a housing for the exchanger of Gross et al. or Norbäck as modified above. The precise configuration of the components of the housing (i.e. two halves seamed along a median plane as shown in applicant's Fig. 5 vs. a full depth housing and cover plate as shown in Blomgren) is deemed an obvious matter of design choice; choosing a potential configuration from among a limited number of possibilities that permit the insertion of the stack and reliable sealing of the housing components would have clearly been within the level of ordinary skill in the art.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Maute is cited as an alternative to Gross et al. The remaining references of record show various stacked plate/stacked element heat exchanger designs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone number is (571) 272-4910. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Allen J. Flanigan/
Primary Examiner, Art Unit 3744